**Template | Unit Enhancement**

***EXPLANATION & ARGUMENTATION***

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Background Information**

**Instructional Materials Title: Sound Unit**

**Publication Date: August 23rd , 2013**

**Work Group Participants: Tiffany Evenstad, Jeannie Revello, Stephanie Chen, Erin Bell**

**Date Developed: August 21st, 2013**

**High Leverage Lesson (Title and Page Number): Lesson 1**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Rationale**

· **Why we identified this particular lesson—It introduces the big idea of vibrating objects cause sound.**

**- Connections to NGSS Practices and WA Science Standards**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Explanation* Lesson Enhancement**

**Overview**

· **Identification of where within the High Leverage Lesson to insert enhancement—page 10 after step2 of Engage and Encounter: Start modification with a revised question “What happens when different turning forks are struck on the same surface?”**

· **Key instructional strategies and tools needed---Shared Writing of CER ; Anchor chart of the data table**

**Part 1: Lesson Modifications to Lead Up to *Explanation* Experience**

**Part 2: *Explanation* Learning Sequence**

1. **Before introducing the modified Focus Question, introduce to student tuning forks and do an non-example observation.**

Observation of Tuning Forks on the Table

|  |  |  |
| --- | --- | --- |
| Sense | Long Tuning Fork | Short Tuning Fork |
| Hear |  |  |
| See |  |  |
| Feel |  |  |

1. **Modified Focus Question: What happens when different tuning forks are struck on the same surface?**
2. Follow Explore and Investigate steps in the instructional guide.
3. After step 1 of reflect and explain section, construct data table using student observations. See example of data table, titled “ Observation of Tuning Forks struck on the Surface”

Observation of Tuning Forks struck on the Surface (Evidence)

|  |  |  |
| --- | --- | --- |
| Sense | Long Tuning Fork | Short Tuning Fork |
| Hear |  |  |
| See |  |  |
| Feel |  |  |

1. Using the evidence table above, introducing C(claim) in the CER framework. Students will learn what a claim is and the class will state the claim together. The claim should be “Both tuning forks vibrate and produce sound when struck.”
2. Ask the students how do we know and teacher will guide the students to refer back to the data table and label it as evidence. Teacher will state, “ This is our evidence.”
3. Shared writing beginning reasoning statements using claim, select relevant evidence (Additional Reasoning citing science reference will be introduced in later lessons).

**Part 3-A: Describe Assessment Task—None (The assessment portion will be introduced in other lessons since this is the introduction of the CER model).**

*Include the* ***question****,* ***evidence*** *students will use, and* ***scientific concepts*** *students will use in their reasoning.*

**Part 3-B: Assessment Rubric---None (The assessment portion will be introduced in other lessons since this is the introduction of the CER model).**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Additional Information**

NOTES

· Information that will be useful when teaching this lesson ---We are keeping the anchor chart for later reference and on going data collection.

* Resources that will be useful ---Possibly using a KLEWs chart in conjunction with the data table.

|  |  |
| --- | --- |
| **COMPONTENT** | **DESCRIPTION** |
| KNOW (K) | Document the uncovering of prior knowledge by asking, “what do you think you know about \_\_\_\_\_?” |
| LEARNING (L) | This is the **CLAIM** column.  Entries are based on statements of learning in response to the guiding question. |
| EVIDENCE (E) | **Evidence** is added to the chart when students share their observations before claims are constructed.  Arrows are used on the chart to connect claims to multiple pieces of evidence |
| WONDERINGS (W) | Testable questions are documented as they arise and every effort is made to test them at some point in the unit. Testable questions often surface during investigations.  *Misconceptions can be rephrased as testable questions.* |
| SCIENTIFIC PRINCIPLES (S) | Throughout the science unit, science concepts are added to this column. They are used during discourse to build a more complete explanation by further elaborating the connection among claims and evidence. |

- Scaffolds that students will use (Shared writing and the students can create their own data tables on their science notebook).